

XVI.—LIST OF PATENTS GRANTED BY THE UNITED STATES TO THE END OF 1872, FOR INVENTIONS CONNECTED WITH THE CAPTURE, UTILIZATION, OR CULTIVATION OF FISHES AND MARINE INVERTEBRATES.

1. HOOKS.

Date of patent.	Number.	Inventor.	Subject of invention.
July 28, 1846	.....	Englebrecht & Skiff	Spring-hook. When fish pulls on bearded hook, a catch slips holding the spring-hook, which, being let loose, strikes the fish and holds him until taken off by the angler.
Aug. 21, 1847	.....	Stanton Pendleton	Spring-hook.
Aug. 21, 1847	.....	Job Johnson	Spring-hook.
Aug. 15, 1848	.....	Ellis & Gritty	Spring-hook. When fish pulls on the bearded hook, it slips the spring-hook, which strikes and holds the fish fast.
Aug. 15, 1848	.....	W. P. Blake	Spring-hook. When fish pulls on bait, it springs open, holding the jaws of the fish apart.
Sept. 5, 1848	.....	W. Jenks	Spring-hook.
Mar. 20, 1849	6, 207 *	Job Johnson	Spring-hook; twenty-one different kinds of hook and method of attachment.
Oct. 8, 1850	7, 709	Warner & Gaylord	Spring-hook.
April 6, 1852	8, 853	Julio T. Buels	Trolling-hook.
April 11, 1854	10, 771	..... do	Spring-hook.
April 11, 1854	10, 761	Henry Siglers	Combination spring-hook.
Jan. 19, 1855	13, 081	Richard P. Cook	Spring-hook.
Jan. 19, 1855	13, 068	Charles De Saxe	Trolling-hook. Has a spring shield that covers the point of the hook when fishing among weeds.
Oct. 9, 1855	13, 649	Job Johnson	Spring-hook.
April 22, 1856	14, 706	Julio T. Buels	Fly or trolling hook.
July 14, 1857	17, 803	Donald McLean	Self-setting trap-hook.
Sept. 20, 1859	25, 507	Riley Haskels	Trolling-hook.
Feb. 12, 1861	31, 396	W. L. Morris	Spring-hook. When the line is pulled, a catch slips off the ends or levers of the hook, and a spring draws the bearded points together into the fish.
Sept. 20, 1864	44, 368	N. A. Gardner	Spring-hook. Two bearded hooks, forming part of a coil-wire spring with eyes, and rod heaving a line-eye for setting and releasing the hooks.
Nov. 7, 1865	50, 799	Germond Crandell	Combination double-lever hook.
Dec. 19, 1865	51, 651	Davis & Johnson	Spring-hook.
Nov. 20, 1866	59, 844	Jacob King, jr	Spring-hook.
Nov. 20, 1866	59, 893	C. O. Crosby	Fish-hook, (flattened in bend.)
Jan. 9, 1866	51, 951	B. B. Livermore	Plain hook, with wire loop, to prevent fish from stealing the bait.
April 24, 1866	54, 251	Johnson & Howarth	Spring or spear hook.
May 15, 1866	54, 684	W. D. Chapman	Trolling-hook, with spring and fly, the latter easily removed.
Oct. 2, 1866	58, 404	W. C. Goodwin	Plain hook; spiral spring around the hook to press the bait down to point.
Jan. 1, 1867	60, 786	E. R. & J. W. Rhodes	Spring-hook.
Feb. 12, 1867	62, 042	B. Lee, jr	Hook; the shank made in form of spiral spring.
Aug. 27, 1867	68, 027	F. Angillard	Lever-hook, so arranged that when fish pulls at bait another hook strikes it and makes fast.
Nov. 12, 1867	70, 868	A. J. Leinhart	Spring-hook.
Nov. 12, 1867	70, 913	Elisha Sterling	Extension or trap hook, with two or more hooks; one on swivel to hold bait, the other to grapple the fish while pulling from the water.
Sept. 24, 1867	69, 221	D. Kidders	Spring-hook. Two hooks, one on either end of piece of wire or shank; when baited they are pressed together, but will separate when the fish bites.
April 28, 1868	77, 365	R. A. Fish	Hook.
June 30, 1868	79, 446	J. B. Christian	Trolling-hook, with artificial bait.
July 21, 1868	80, 151	A. A. Dennett	Spring-hook.
Jan. 26, 1869	86, 154	Martin Heltz	Hook, with an eye to attach hook.
Sept. 14, 1869	94, 293	Francis Kemlo	Lock-hook.
Sept. 14, 1869	94, 294	..... do	Lock-hook.
Sept. 14, 1869	94, 295	..... do	Grapple-hook, with guard to prevent fish from getting loose from barb.

276 REPORT OF COMMISSIONER OF FISH AND FISHERIES.

List of patents granted by the United States, &c.—Continued.

HOOKS—Continued.

Date of patent.	Number.	Inventor.	Subject of invention.
Oct. 12, 1869	95, 755	F. T. Augers	Spring-hook. When set, the three hooks are close together; but when the line which is attached to the middle hook is pulled, it loosens the outer hooks, which expand in the mouth of the fish.
July 5, 1870	104, 930	W. D. Chapman	Propeller or trolling hook.
Feb. 21, 1871	111, 298	L. Arnold	Mode of attaching hook to line.
May 30, 1871	115, 434	W. D. Chapman	Propeller or trolling hook.
Aug. 2, 1871	117, 719	L. Arnold	Mode of attaching hooks to lines.
Nov. 21, 1871	121, 182	J. H. Mann	Trolling spoon-hook.
Feb. 20, 1872	123, 544	G. Sinclair	Trolling-hook.
July 16, 1872	129, 053	E. Pitcher	Hook, with double spear, to thrust down into fish when caught by hook.

2. LINES, GRAPPLES, TRAPS, &c.

Mar. 3, 1868	75, 075	D. C. Talbots	Fishing-tackle for anglers.
April 7, 1868	76, 489	T. B. McCaughans	Fish-trap.
May 12, 1868	77, 893	Joseph Koehlers	Fishing-apparatus.
Dec. 22, 1868	85, 199	E. B. Beach	Fish-trap.
Nov. 4, 1868	16, 014	Elmore Horton	Spear and grapple.
Dec. 9, 1868	16, 217	Levi Van Hossen	Fish-trap.
May 25, 1868	20, 343	Jacob Gail	Grapple.
Jan. 18, 1869	22, 644	Robert Gray	Fish-trap.
Mar. 8, 1869	23, 154	Daniel Bowmans	Fish-trap.
Aug. 2, 1864	43, 694	A. J. Leinharts	Fishing-tackle.
June 3, 1862	35, 476	T. W. Roys	Method of raising whales.
Jan. 30, 1872	123, 164	O. M. Fallar	Fishing-apparatus.
Sept. 7, 1872	131, 439	Harcourt & Cottingham	Fish and animal trap, made of wire, each wire of gate made movable.
Oct. 22, 1872	132, 476	C. Lirandais	Trap-net, used in shallow water, umbrella fashion, to lie on bottom, and having springs to close by trigger.

3. REELS.

May 26, 1838	.....	Arrmah Tiffaney	Reel, for anglers' use.
July 26, 1838	.....	do	Reel or mackerel-latch, used in fishing from vessel.
Aug. 5, 1856	15, 466	John A. Baileys	Reel.
Feb. 10, 1857	16, 626	Edward Deacons	Reel.
Aug. 9, 1859	24, 987	Edward Billingham	Reel.
Feb. 28, 1860	27, 305	Mark S. Palmer	Reel, with guard to line to prevent it from clogging the reel.
Feb. 9, 1864	41, 494	Andrew Dougherty	Reel, with brake.
July 5, 1864	43, 460	W. H. Van Geison	Reel, with stop-attachment.
July 12, 1864	43, 485	Darwin Ellis	Reel, with stop.
July 12, 1864	43, 546	T. W. Cummings	Reel, (mode of attachment to pole,) by spring.
Aug. 29, 1865	49, 663	W. M. Stewart	Reel, set inside of rod.
June 19, 1866	55, 653	Anson Hatch	Reel, skeleton, similar to Billingham.
Aug. 7, 1866	56, 937	A. B. Hartis	Reel.
Nov. 26, 1867	71, 344	Julius Von Hofe	Reel.
Sept. 22, 1868	82, 377	W. H. Bradley	Reel, with two concaved disks.
Nov. 3, 1868	83, 740	J. Stetson	Clamp or reel, used for hand-line fishing.
Feb. 23, 1869	87, 188	Francis Xavier	Reel, pivoted and made to screw into rod, bridge, or stick in ground, with bell attachment.
Mar. 23, 1869	88, 026	C. S. H. Foster	Mackerel-latch.
Oct. 12, 1869	95, 839	James J. Ross	Reel.
Nov. 9, 1869	96, 652	P. A. Allmaires	Reel, set into rod.
May 31, 1870	103, 668	G. C. Sheldons	Reel, more of a kite-string holder.
Mar. 7, 1871	112, 326	E. L. Decker	Mackerel-latch.
Nov. 14, 1871	121, 020	Silas B. Terry	Reel, with friction device.
June 18, 1872	123, 137	A. H. Fowler	Reel, made of rubber skeleton.
Oct. 14, 1873	134, 917	George Mooney	Reel, manner of attaching to rod.
June 23, 1873	135, 283	Charles L. Noe	Reel, similar to Billingham patent.

4. RODS.

Apr. 10, 1854	10, 795	C. Desaxe	Rod, made hollow, to contain float, lines, &c.; peculiar float.
May 20, 1862	35, 339	Julius Von Hofe	Rod; tip has a sheave or pulley on the end.
Oct. 16, 1866	58, 833	R. N. Isaacs	Tips of rods enameled to prevent wear of line.
May 18, 1858	20, 309	Underwood & Bargas	Rod, with pulley set in tip.
Oct. 4, 1859	25, 693	Henry Pritchard	Guides for lines on rods.
Dec. 24, 1867	72, 667	J. H. Montrose	Rod, hinged like parasol-handle.

List of patents granted by the United States, &c.—Continued.

RODS—Continued.

Date of patent.	Number.	Inventor.	Subject of invention.
Mar. 17, 1870	100,895	W. J. Hubbard.....	Jointed rod, screwed together, to prevent slipping apart, by male and female screws.
Sept. 26, 1871	119,251	Thomas Tout.....	Rod, principally of wood, with lameneal of whale-bone running longitudinally.

5. FLOATS, SINKERS, AND SWIVELS.

Dec. 12, 1854	12,060	J. W. Heard.....	Sinker, made hollow to contain shot, so that it may be adjusted to required weight.
Feb. 2, 1869	86,609	J. A. Terrell.....	Float, made of glass.
Feb. 8, 1870	99,572	James Ingram.....	Float, with ring and plugs in ends of it, so that it may be adjusted to line without slipping over ends of line.
May 26, 1872	127,218	Brown & Jarvis.....	Float, made of vulcanized rubber, for seines.
July 9, 1872	128,885	E. Jewell.....	Float, for ready attachment to line, to avoid slipping over ends of line; spiral wire in either end.
Apr. 1, 1856	14,587	Wooster Smith.....	Fish-hook and sinkers, used for cod-fishing.
July 7, 1863	39,192	William Woodbury.....	Sinker, with spring inside for deep-sea fishing.
July 21, 1865	46,453	E. F. Decker.....	Sinker, with guard-ring and swivel.
Sept. 25, 1866	58,211	L. A. Burnham.....	Sinker, with lever, &c.
July 31, 1866	56,857	J. A. Martin.....	Sinker, with lever, &c.
July 29, 1867	61,625	J. A. Martin.....	Sinker, with lever, &c.
Dec. 10, 1867	71,879	Martin Hiltz.....	Swivel, for anglers' use.
May 5, 1868	77,628	L. D. Lothrop.....	Swivel, for anglers' use.
May 12, 1868	77,774	W. H. Smith.....	Sinker, made in several pieces, to increase or decrease weight.
June 2, 1868	78,546	E. F. Stacey.....	Nipper, or latch, to hold line.
Nov. 3, 1868	83,681	Sewall Albee.....	Jig, or sinker, three pieces, and method of attaching to hook.
Dec. 15, 1868	84,885	Leach & Hutchins.....	Mode of attaching hook to sinker.
Feb. 9, 1869	86,746	F. Telgmans.....	Sinker, sectional.
Aug. 3, 1869	93,220	R. T. Osgood.....	Sinker, with spring and swivel, egg-shape.
Sept. 5, 1871	118,772	H. Camp.....	Metallic line, with loops and reel.

6. PROJECTILES.

July 29, 1841	2,195	William Carseley.....	Spear.
Mar. 16, 1844	3,490	Albert Moon.....	Harpoon; harpoon contains bottle of explosive material, which operates to throw the flukes out when it strikes.
Sept. 19, 1846	4,764	Oliver Allen.....	Lance.
Nov. 24, 1846	4,865	Holmes & West.....	Lance or harpoon, moveable flukes.
Dec. 3, 1846	4,873	Charles Randall.....	Harpoon, moveable flukes.
Dec. 5, 1848	5,949	Oliver Allen.....	Gun-harpoon.
June 4, 1850	7,410	Robert Brown.....	Harpoon, mode of attaching line.
Aug. 20, 1850	7,572	do.....	Harpoon lance, mode of attaching line.
Sept. 3, 1850	7,610	C. F. Brown.....	Harpoon.
Nov. 19, 1850	7,777	William Albertson.....	Harpoon.
May 6, 1851	8,073	Charles Burt.....	Exploding harpoon.
Mar. 30, 1852	8,843	Sonnenburg & Richten.....	Electric whaling-apparatus.
Apr. 6, 1852	8,862	J. D. B. Stillman.....	Harpoon, moveable flukes and pulleys.
June 22, 1852	9,044	C. C. Brand.....	Lance for killing whales. Re-issued August, 1856.
Aug. 19, 1856	15,577	Nathan Schofield.....	Expanding spiral-winged projectile.
Mar. 10, 1857	16,819	do.....	Bomb-lance, with springs. Re-issued July 7, 1857.
Apr. 28, 1857	17,173	Rufus Sibley.....	Bomb-lance, with moveable flukes.
May 26, 1857	17,370	Grudehos & Eggers.....	Bomb-lance, with springs and moveable flukes.
May 26, 1857	17,407	Rufus Sibley.....	Projectile.
May 19, 1857	17,312	C. C. Brand.....	Projectile.
Oct. 20, 1857	18,458	J. Q. Kelly.....	Harpoon.
Nov. 10, 1857	18,568	H. Bates.....	Bomb.
Dec. 9, 1857	18,824	N. Schofield.....	Projectile.
Feb. 16, 1858	19,363	H. W. Harkness.....	Harpoon and lance.
Aug. 17, 1858	21,219	Rufus Sibley.....	Bomb-lance.
Aug. 24, 1858	21,278	N. Schofield.....	Harpoon-lance.
Nov. 2, 1858	21,949	George Doyle.....	Harpoon.
Nov. 16, 1858	22,054	A. F. & J. H. Andrews.....	Bomb-lance.
May 3, 1859	23,827	P. B. Comins.....	Bomb-lance.
June 14, 1859	24,371	Robert Brown.....	Harpoon-bomb.
Aug. 9, 1859	25,086	Isaac Goodspeed.....	Projectile.
Dec. 11, 1860	30,869	Theodore Briggs.....	Harpoon-lance.
Jan. 22, 1861	31,190	Thomas W. Roys.....	Shoulder-gun, for harpoons, lances, &c.
July 16, 1861	32,830	Goodspeed & Crawley.....	Guide for bomb-lance.
June 3, 1862	35,474	Thomas W. Roys.....	Rocket-harpoon.

278 REPORT OF COMMISSIONER OF FISH AND FISHERIES.

List of patents granted by the United States, &c.—Continued.

PROJECTILES—Continued.

Date of patent.	Number.	Inventor.	Subject of invention.
Apr. 21, 1863	32, 207	M. Adams	Harpoon, with semi-revolving head.
Oct. 27, 1863	40, 387	Oliver Allen	Bomb-lance, with perforated fire-proof diaphragm.
Feb. 21, 1865	46, 437	Silas Barker	Exploding-harpoon.
Aug. 22, 1865	49, 548	Ebenezer Pierce	Apparatus for killing whales.
Apr. 24, 1866	54, 211	Roys & Liebiendahl	Rocket-harpoon.
Apr. 23, 1867	64, 045	Robert E. Smith	Shooting-harpoon, grooved head, to receive the pivoted barb.
Dec. 3, 1867	71, 763	Z. Kelley	Harpoon, with stops, springs, and catches.
June 9, 1868	78, 675	.....do	Bomb-lance.
June 1, 1869	90, 568	E. Pierce	Bomb-lance.
Dec. 7, 1869	97, 693	J. P. Reichtens	Gun-harpoon.
May 7, 1872	126, 388	Charles Freeman	Bomb-harpoons.

7. NETS AND POUNDS.

Mar. 21, 1838	.....	Russell Evarts	Seine for deep-water fishing.
June 4, 1838	.....	B. W. Hale	Seine for deep-water mackerel fishing.
Sept. 19, 1838	.....	Cyrus Tracey	Seine.
Mar. 17, 1843	.....	Harris Cook	Gill-net.
Apr. 25, 1843	.....	John Downs	Form for making nets for taking eels.
Sept. 14, 1844	.....	Carr, Shannon & Co.	Net or trap; place for bait similar to eel-pot.
Apr. 18, 1854	10, 794	Charles De Saxe	Landing-net.
Apr. 27, 1855	20, 125	Thomas Hall	Seine or net.
June 29, 1858	20, 725	Benjamin Merritt	Seine for sea-fishing.
Apr. 8, 1862	34, 887	F. Goodwin	Net or trap.
Apr. 25, 1863	39, 676	W. Randolph	Net, to be anchored and used as trap.
June 19, 1866	55, 635	Edw. A. Field	Net.
Aug. 7, 1866	56, 917	Perl & Larkin	Vertical deep-water fishing-net.
Nov. 6, 1866	59, 429	William Maxwell	Net, double, with rigid mouth; can be anchored at any depth by floats and sinkers.
Feb. 26, 1867	62, 481	C. C. Crossman	Net, attached to side of boat, so as to be lowered or raised.
Dec. 17, 1867	72, 157	C. Drexel	Securing and feeding crabs.
Mar. 31, 1868	76, 284	Daniel Will	Gill-net.
Apr. 7, 1868	76, 357	Thomas Bell	Net-attachment for boats, with gauge to mast, to hoist or lower.
June 9, 1868	78, 716	B. Arnold	Mode of making nets.
July 28, 1868	80, 274	John Collins	Brace-seine.
Sept. 28, 1868	82, 499	T. Cartwright	Set-net, to be anchored; the boat is attached about midway of the net, and a line is attached to small end of bag, and can be raised into boat and the fish taken out without disturbing the rest of the net.
Oct. 13, 1868	82, 913	George D. Allen	Eel-pot.
Oct. 27, 1868	83, 493	Smith Harper	Net.
Oct. 27, 1868	83, 429	W. S. Wilcox	Pound net or trap.
Mar. 9, 1869	87, 740	F. A. Wardmiller	Dip-net.
Feb. 8, 1870	99, 713	P. C. Sabin	Purse-net, with bait-box, the net stretched on wires similar to umbrella, and, when ready to hoist, it is closed like a purse.
Apr. 4, 1871	113, 292	J. E. Hammond	Fish-trap net.
Apr. 4, 1871	113, 572	Benjamin Rider	Net-supporter.
Apr. 18, 1871	113, 817	P. E. Tierman	Pound-net.
Aug. 15, 1871	117, 957	L. H. Alexander	Net.
Nov. 14, 1871	120, 974	R. Jeffrey	Seine.
Mar. 12, 1872	124, 635	H. Smith	Seine, arranged so that portion of mouth may be below the surface.

8. OYSTER CULTURE AND GATHERING.

Mar. 2, 1858	19, 516	Thomas Sheehan	Oyster rake or tongs.
Oct. 4, 1859	25, 680	Thomas P. Sink	Reel or windlass, for hoisting oyster-dredges.
Oct. 11, 1864	44, 634	George Jury	Reel for hoisting oyster tongs or dredges.
Oct. 2, 1866	58, 426	Job Johnson	Oyster-rake.
Nov. 20, 1866	59, 812	W. Belbin	Mode of hoisting oyster-dredge.
Mar. 17, 1868	75, 550	Job Johnson	Oyster-tongs.
Apr. 14, 1868	76, 697	Asa Barrett	Oyster-rake.
July 19, 1870	105, 495	J. W. Sands	Grappling-tongs, (oyster.)
Sept. 27, 1870	107, 740	E. Ward	Oyster-tongs.
Feb. 21, 1860	27, 213	W. L. Force	Oyster-dredge.
May 20, 1862	35, 324	J. H. Newcomb	Oyster-dredge.
May 5, 1863	38, 436	Joseph Whitecars	Oyster-dredge.
Jan. 17, 1865	45, 904	W. Belbin	Oyster-dredge.
June 5, 1866	55, 223	Charles T. Belbin	Oyster-dredge.

List of patents granted by the United States, &c.—Continued.

OYSTER CULTURE AND GATHERING—Continued.

Date of patent.	Number.	Inventor.	Subject of invention.
Nov. 20, 1866	59, 812	W. Belbin.....	Oyster-dredge.
Jan. 4, 1867	65, 442	T. P. Sinks.....	Oyster-dredge.
Feb. 25, 1868	74, 857	.....do.....	Oyster-dredge.
Apr. 7, 1868	77, 110	S. S. Shaw.....	Reel for oyster-dredge.
June 2, 1868	78, 509	C. T. Belbin.....	Oyster-dredge.
Aug. 18, 1868	81, 304	T. P. Sinks.....	Oyster-dredges.
June 19, 1869	85, 936	Daniel Kellers.....	Oyster-dredge chuck.
Apr. 27, 1869	89, 323	Thomas F. Mayhew.....	Oyster-dredge.
Nov. 30, 1869	97, 420	.....do.....	Oyster-dredge.
Feb. 15, 1870	99, 900	R. O. & W. T. Howard.....	Reel for oyster-dredges.
Oct. 1, 1871	120, 463	T. P. Sinks.....	Oyster-dredge.
Nov. 28, 1871	121, 227	W. C. Baker.....	Oyster-dredge.
Nov. 28, 1871	121, 249	E. B. Lake.....	Oyster-dredge.
Jan. 2, 1872	122, 423	N. A. Williams.....	Oyster-dredge.
Jan. 16, 1872	122, 843	T. F. Mayhew.....	Reel or windlass for oyster-dredge.
Apr. 23, 1872	125, 964	T. W. Landon.....	Oyster-dredge.
June 11, 1872	127, 903	Benjamin F. Leyford.....	Oyster nurseries.
Aug. 20, 1872	130, 631	E. H. Frazier.....	Shell-oyster bucket.
Oct. 29, 1872	132, 668	J. A. Ketcham.....	Oyster-dredge.
Jan. 21, 1873	135, 167	Isaac Smith.....	Oyster-tongs.

9. PRESERVATION AND UTILIZATION OF FISH.

Mar. 19, 1861	31, 736	Enock Piper.....	Preserving fish and meat.
Dec. 15, 1864	1, 618	James B. Herreshoff....	Mode of treating fish-water for use in dyeing, &c. (Reissued December 15, 1864.)
Nov. 5, 1867	70, 435	George H. Herron.....	Improved mode of preparing fish for food. (Reissued January 16, 1872.)
May 19, 1868	78, 016	Benjamin Robinson.....	Improved process of obtaining gelatine from fish-heads.
Sept. 8, 1868	81, 987	William D Cutler.....	Improved method of preparing, desiccating, and preserving fish.
Oct. 27, 1868	83, 533	P. Nunan.....	Improvement in apparatus for preserving and freezing fish and meats, &c. (Drawing.)
Nov. 10, 1868	83, 836	William D. Cutler.....	Articles of food prepared from fish and potatoes.
Dec. 8, 1868	84, 801	Elisha Crowell.....	Improved article of prepared codfish.
Jan. 19, 1869	85, 913	William Davis.....	Improvement in freezing-box for fish. (Drawing.)
Jan. 19, 1869	86, 040	Thomas Sim.....	Improved compound for preserving fish.
Mar. 16, 1869	87, 986	Benj. F. Stephens.....	Improvement in putting up codfish.
Mar. 23, 1869	88, 064	J. Nicholson.....	Improved process of preparing fish for food.
May 25, 1869	90, 334	John Atwood, jr.....	Improved process of curing and putting up codfish.
June 8, 1869	90, 944	Havard & Harmony.....	Improved process of preserving meat, fowls, fish, &c.
Dec. 6, 1870	109, 890	D. Y. Howell.....	Device for freezing fish, meats, &c. (Drawing.)
Feb. 28, 1871	112, 129	Samuel H. Davis.....	Improvement in preserving fish by freezing.
May 21, 1872	127, 115	Isaac L. Stanley.....	Improved process of preparing fish for food.
Oct. 15, 1872	132, 316	Edward A. Pharo.....	Improvement in putting up salt mackerel and similar fish.
Dec. 15, 1868	84, 855	Edward E. Burnham.....	Preservation and improvement in fish or bait used in catching fish.
Feb. 11, 1868	74, 378	T. D. Kellogg.....	Improved method of preserving bait for fishing. (Drawing.)
Sept. 28, 1869	95, 179	R. A. Adams.....	Improvement in preserving fish.
Oct. 26, 1869	96, 288	George T. Thorp.....	Improved fish-bait.
Nov. 23, 1869	97, 145	R. A. Adams.....	Improvement in curing and preserving fish.
Mar. 29, 1870	101, 260	Silvanus Hamblin.....	Improved bait-mill for fishermen. (Drawing.)
Jan. 21, 1873	135, 113	Samuel A. Goodman, jr..	Bait, composed of vegetable and animal matter; is mixed with ordinary bait.

10. FISH-CULTURE.

Sept. 17, 1867	68, 871	Seth Green.....	Spawn-hatching mackerel.
Jan. 16, 1868	78, 952	W. H. Furman.....	Fish-breeding.
Mar. 16, 1868	78, 952	W. H. Tierman.....	Fish-breeding device.
Aug. —, 1868	80, 775	A. J. Smith.....	Transporting live fish.
June 11, 1872	127, 903	Benjamin F. Leyford....	Oyster-nurseries.
July 11, 1871	116, 995	R. E. Sabin.....	Fish-nursery.
July 12, 1872	105, 176	A. S. Collins.....	Fish-spawning screen.
Oct. 22, 1872	132, 349	G. A. Brackett.....	Fishway.

280 REPORT OF COMMISSIONER OF FISH AND FISHERIES.

List of patents granted by the United States, &c.—Continued.

11. PATENTS GRANTED PRIOR TO 1834.

[The order shows that patents were granted to these persons, but the drawings and applications were destroyed by fire in 1836.]

Date of patent.	Number.	Inventor.	Subject of invention.
1795	Joseph Ellicott, Pa.	Catching fish.
1802	Nathaniel Robbins, N. J.	Mode of carrying fish in warm weather.
1809	Philip Groff, Pa.	Seine.
1812	Samuel May, Pa.	Seine.
1814	James Wells, jr., N. J. ...	Vessels and nets for fishing.
1818	James Drummond	Net.
1824	Daniel Gordon, Pa.	Catching fish.